

ULTRACORE® HD-12C

Mild Steel, All Position · AWS E71T-12C-JH8, E71T-1C-JH8, E71T-9C-JH8



KEY FEATURES

- Increase weld deposition to more than 14 lbs/hr out-of-position
- Fast freezing slag for a flat bead shape and increased productivity in all positions
- Operators can set the machine on a single setting and weld in all positions
- Weld over light rust, mill scale, and primer
- Capable of exceeding 27 J [20 ft-lbf] at -40°C [-40°F]
- ProTech® foil bag packaging

WELDING POSITIONS

All

SHIELDING GAS

100% CO₂
Flow Rate: 40 - 50 CFH

CONFORMANCES

AWS A5.20:	E71T-12C-JH8, E71T-1C-JH8, E71T-9C-JH8
ABS:	3YSA H10
CWB/CSA W48:	E491T1-C1A4-CS2-H8 (E491T-9J-H8)
DNV - 2.9:	III YMS H10
Lloyd's Register:	3YS H10
ISO 17632-B:	T49.4 T12-1 C1 A-K H10

TYPICAL APPLICATIONS

- Heavy Fabrication
- Mining
- General Fabrication
- Structural
- Applications requiring PWHT of mild steels

DIAMETERS / PACKAGING

Diameter in (mm)	15 lb (6.8 kg) Plastic Spool 60 lb (27.2 kg) Master Carton	33 lb (15 kg) Fiber Spool	50 lb (22.68 kg) Fiber Spool
0.045 (1.1)	ED035631	ED034274, ED038184*	ED038185*
0.052 (1.3)	ED035632	ED034275	ED038186*
1/16 (1.6)	ED036295	ED034276	ED038187*

* Buy America Product

MECHANICAL PROPERTIES⁽¹⁾

	Yield Strength ⁽²⁾ MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Charpy V-Notch J [ft-lbf]	
				@ -29°C [-20°F]	@ -40°C [-40°F]
Requirements⁽⁴⁾ AWS A5.20: E71T-12C-JH8	400 [58] min	480-620 [70-90]	22 min	-	27 [20] min
Typical Results⁽³⁾ As-Welded with 100% CO ₂ Stress-Relieved for 1 hr @ 620°C (1150°F)	538 [78] 496 [72]	593 [86] 579 [84]	28 28	93 [68] 58 [43]	51 [38] -

DEPOSIT COMPOSITION⁽¹⁾

	%C	%Mn	%Si	%Ni
Requirements⁽⁴⁾ AWS A5.20: E71T-12C-JH8	0.12 max	1.60 max	0.90 max	0.50 max
Typical Results⁽³⁾ As-Welded with 100% CO ₂	0.04	1.35	0.33	0.40
	%S	%P	Diffusible Hydrogen (mL/100g weld deposit)	
Requirements⁽⁴⁾ AWS A5.20: E71T-12C-JH8	0.03 max	0.03 max	8.0 max	
Typical Results⁽³⁾ As-Welded with 100% CO ₂	0.01	0.01	4-7	

⁽¹⁾Typical all weld metal. ⁽²⁾Measured with 0.2% offset. ⁽³⁾See test results disclaimer. ⁽⁴⁾As-Welded with 100% CO₂.

TYPICAL OPERATING PROCEDURES

Diameter, Polarity Shielding Gas	CTWD ^(B) mm (in)	Wire Feed Speed m/min (in/min)	Voltage (volts)	Approx. Current (amps)	Melt-Off Rate kg/hr (lb/hr)	Deposition Rate kg/hr (lb/hr)	Efficiency (%)
0.045 in (1.1 mm), DC+ As-Welded with 100% CO ₂	25 (1)	4.4 (175)	24-29	115	1.8 (3.9)	1.5 (3.4)	85-88
		6.4 (250)	25-30	140	2.5 (5.6)	2.2 (4.8)	
		7.6 (300)	26-31	155	3.1 (6.8)	2.6 (5.8)	
		8.9 (350)	26-31	170	3.6 (7.9)	3.1 (6.8)	
		10.2 (400)	26-31	185	4.1 (9.0)(10.1)	3.5 (7.8)	
		11.4 (450)	27-32	200	4.6 (11.3)	4.0 (8.8)	
		12.7 (500)	27-32	215	5.1 (12.4)	4.4 (9.8)	
		14.0 (550)	28-33	230	5.6 (13.5)	4.9 (10.8)	
15.2 (600)	28-33	245	6.1	5.3 (11.7)			
0.052 in (1.3 mm), DC+ As-Welded with 100% CO ₂	25 (1)	3.8	24-29	140	2.1 (4.7)	1.7 (3.8)	85-88
		5.1 (150)	25-30	160	2.9 (6.3)	2.4 (5.2)	
		6.4 (200)	26-31	180	3.5 (7.8)	3.0 (6.5)	
		7.6 (250)	26-31	205	4.3 (9.4)	3.6 (7.9)	
		8.9 (300)	27-32	225	5.0 (11.0)	4.2 (9.2)	
		9.5 (350)	27-32	235	5.3 (11.7)	4.5 (9.9)	
		10.8 (375)(425)	27-32	255	6.0 (13.3)	5.1 (11.2)	
		12.1 (475)(500)	28-33	275	6.8 (14.9)	5.7 (12.6)	
12.7	28-33	290	7.1 (15.6)	6.0 (13.3)			
1/16 in (1.6 mm), DC+ As-Welded with 100% CO ₂	25 (1)	3.8	23-28	200	2.9 (6.4)	2.4 (5.3)	85-88
		4.4	24-29	215	3.4 (7.5)	2.9 (6.3)	
		5.1 (150)(175)	24-29	230	3.9 (8.5)	3.3 (7.2)	
		5.7 (200)(225)	24-29	245	4.4 (9.6)	3.7 (8.1)	
		6.4 (250)(300)	25-30	255	4.8 (10.6)	4.1 (9.1)	
		7.6 (325)(350)	25-30	285	5.8 (12.7)	4.9 (10.9)	
		8.3 (400)	26-31	300	6.3 (13.8)	5.4 (11.9)	
		8.9	26-31	310	6.7 (14.8)	5.8 (12.8)	
10.2	27-32	340	7.7 (16.9)	6.7 (14.7)			

^(A)Typical all weld metal. ^(B)Measured with 0.2% offset. ^(C)See test results disclaimer ^(D)As-Welded with 100% CO₂. ^(E)To estimate ESO, subtract 1/4 in (6.0 mm) from CTWD.

TEST RESULTS

Test results for mechanical properties, deposit or electrode composition and diffusible hydrogen levels were obtained from a weld produced and tested according to prescribed standards, and should not be assumed to be the expected results in a particular application or weldment. Actual results will vary depending on many factors, including, but not limited to, weld procedure, plate chemistry and temperature, weldment design and fabrication methods. Users are cautioned to confirm by qualification testing, or other appropriate means, the suitability of any welding consumable and procedure before use in the intended application.

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